



Department of Natural Resources
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NOTIFICATION AND SOIL SAMPLING REQUIREMENTS

for

RETROFITS, UPGRADES and REPAIRS of UNDERGROUND STORAGE TANK SYSTEMS

**(Including DISPENSER or SUMP RETROFITS,
SPILL CONTAINMENT INSTALLATION, REPAIR, or REPLACEMENT)**

Effective Date: October 1, 2012

The Department of Natural Resources and Environmental Control, Tank Management Section (DNREC-TMS) has developed this guidance sheet to assist tank owners, operators and contractors in complying with DE Admin. Code 1351, Delaware's *Regulations Governing Underground Storage Tank Systems* (the UST Regulations) Part A, Section 4.7.; Part B, Sections 1.28. and 2.29.; Part C, Section 1.27. and 2.28.; and Part D, Section 1.28. This is guidance only, the DNREC-TMS may impose additional requirements when deemed necessary.

NOTIFICATION

1. A completed UST Registration & Notification Form must be received by the DNREC-TMS office ten (10) days prior to the Retrofit or Upgrade of an UST system. The UST system *may not* be Retrofitted or Upgraded unless the DNREC-TMS has received the notification form as required in the UST Regulations, Part A, Section 4.7.1. A *Confirmation of Scheduled Tank Work* form will be faxed or emailed to the contractor upon approval of the notification form.
2. If the actual retrofit or upgrade date changes from the date noted on the notification form, the contractor, owner or operator must notify the DNREC-TMS of the change in the date and give at least two (2) days notice prior to the new retrofit or upgrade date. This notification may be done by telephone: (302) 395-2500 or fax: (302) 395-2555. The new date must be approved and confirmed by the DNREC-TMS via a faxed or emailed *Confirmation of Scheduled Tank Work* form to the contractor.
3. If the retrofit or upgrade work has not begun with sixty (60) days of receipt of the DNREC-TMS *Confirmation of Scheduled Tank Work* form, a new notification form must be submitted.
4. The UST Owner or Operator must notify the DNREC-TMS within 48 hours after the retrofit or upgrade work begins.
5. When prior approval is requested for a deviation from the soil sampling recommendations in this guidance, including a tank pit containing multiple tanks, a site map showing all tanks, dispensers, vents, lines, and the dimensions of the tank(s) must be submitted with the notification. The DNREC-TMS will review this information and use it to determine the number of soil samples necessary to characterize the site.

RETROFIT, UPGRADE, and REPAIR REQUIREMENTS

1. A State of Delaware Certified Contractor is required to perform any Retrofit or Upgrade of an UST system. The contractor must notify the DNREC-TMS prior to beginning any work, and will subsequently receive a faxed or emailed confirmation form from the DNREC-TMS. Records of Retrofit or Upgrades must be maintained for the life of the UST system.
2. Repairs do not require a Certified Contractor or prior notice to the DNREC-TMS. Repairs include replacement in kind of equipment that does not require excavation that exposes backfill or requires the breaking of concrete, such as changing filters, replacement of sump sensors, line leak detectors, ball floats, fill line restrictors, etc. Records of repairs must be maintained for the life of the UST System.
3. The DNREC-TMS requires a precision test be conducted prior to re-commissioning the UST system when any new product lines are installed, when concrete is broken, or when excavation occurs in the tank field or in the vicinity of product, vent or vapor lines. Results of the tank or line test must be forwarded to the DNREC-TMS. Line or tank test failures must be reported immediately to the DNREC by calling 1-800-662-8802.
4. The DNREC-TMS requires a test of the Cathodic protection (CP) system by an individual certified by a nationally recognized industry standard setting organization within six (6) weeks after underground work is performed at or near a site with a CP system. (See CP repair guidance for more specific information)
5. Any time excavation of soil, or removal of concrete, asphalt or other cover is required, a Site Assessment must be performed within ten (10) days of completion of the Retrofit, Upgrade or Repair.

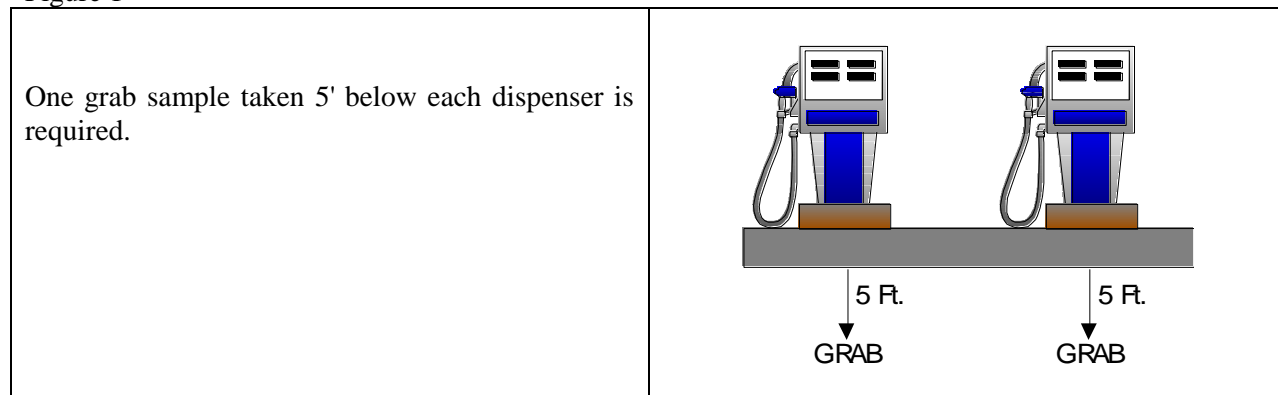
SOIL SAMPLING REQUIREMENTS for RETROFIT, REPAIR or UPGRADE

You must receive approval *in advance*, from the DNREC-TMS, for *any* deviation from these requirements. Requests for deviation must be written, including reason for deviation and a sketch showing proposed sampling locations.

Dispenser or Sump Retrofits

If the retrofit includes replacement of the sump or dispensers, or replacement of piping to the dispenser, then one grab sample per dispenser must be collected from an elevation of five (5) feet below each dispenser or at the top of the water table, whichever is encountered first. (Fig. 1).

Figure 1



Spill Containment Installation or Replacement

Soil samples must be collected when concrete is broken or backfill is exposed to install new spill containment or replace existing spill containment. One grab sample must be collected at the bottom of the excavation for each spill containment device that is installed or replaced.

Tank-top Sump Installation or Replacement

Soil samples must be collected when concrete is broken or backfill is exposed to install new or replace existing tank-top sumps. At least one composite sample must be collected by taking several discrete samples from the excavated material. In the event that no material is excavated in order to install the new sump, one composite sample must be collected from the walls of the excavation in the locations where contamination is visible or most likely to be present. Other tank-top work that exposes backfill and is not specifically mentioned here may require soil sampling at the discretion of the DNREC-TMS.

Piping Run Sampling – Piping includes product, vent, vapor recovery and remote fill piping.

For Piping *installed prior to January 1, 1999* where closure-in-place of a piping run is performed, sampling is required. For the purpose of this Guidance “closure-in-place of a piping run” includes any closure operations which involve pulling or lifting the piping out of an unexposed or unexcavated trench, or leaving the piping in place, as they do not allow for a thorough inspection and evaluation of the soil conditions in the vicinity of the piping. **You are required to contact the DNREC-TMS in advance and obtain approval for a piping sampling plan.**

For piping runs removed from the ground via trenching so that soil conditions beneath the piping can be evaluated, sampling will only be required from areas of the piping trench with observable staining or evidence of a release.

For Piping *installed after January 1, 1999* sampling is not required unless there is observable staining or evidence of a release.

QA/QC PROTOCOL

All samples must be submitted in clean sealed containers provided by the analytical laboratory and kept at $\leq 6^{\circ}\text{C}$ until delivered to the laboratory for analysis. The laboratory must receive samples within twenty-four (24) hours of collection. If sample delivery within twenty-four (24) hours is not possible (for example, samples are collected late on a Friday after the laboratory is closed) proper storage of the samples must be documented on the chain of custody form. A chain of custody form must be maintained at all times for all samples and submitted to the DNREC-TMS.

For sampling events where volatile organic compounds (BTEX, GRO, EDB, EDC, MTBE, etc.) are to be analyzed, a trip blank must accompany the cooler from pickup to delivery. The trip blank must be analyzed for the same volatile organic compounds as the collected soil samples.

For soil sampling events where volatile organic compounds are to be analyzed, methanol preservation or Encore™® sampling must be conducted. Note: Encore™® Samplers **should not** be used when sampling pea gravel. When sampling pea gravel, methanol preservation of the sample in the field is required. Coordinate with your laboratory in advance to determine best sample volume and appropriate bottleware size for representative samples and ease of sample collection.

To minimize the risk of cross-contamination the use of disposable/dedicated sampling equipment is highly recommended when collecting samples. If reusable sampling equipment is preferred, proper decontamination procedures must be employed. The collection of an equipment blank is recommended, not required, when reusable/non-dedicated sampling equipment is used.

To maintain sample integrity, a DNREC-TMS Representative on-site may apply a custody seal to the sample container at the time of sample collection. If the seals are applied a separate chain-of-custody will be provided. This chain of custody must accompany the sample to the laboratory and a copy must be returned to the DNREC-TMS along with the sample results. If a sample is received by the laboratory with a damaged custody seal the DNREC-TMS may not accept the sample results and will request additional samples be collected.

Call the DNREC-TMS for more specific information about sampling methods, including proper procedures to assure QA/QC of samples and decontamination of tools.

REPORTING REQUIREMENTS

1. Site Map noting the sample locations.
2. Results of the soil sample analyses with chain-of-custody.
3. Custody seal chain-of-custody, if applicable.
4. All appropriate disposal documentation (e.g. disposal of product, sludge)
5. If sampling deviation is approved in the field an amended UST Registration and Notification form must be submitted. The name of the DNREC-TMS project officer who approved the deviation must be clearly indicated and the sampling locations must be noted on the site map.

The required documentation must be forwarded to the DNREC-TMS within sixty (60) days of the tank retrofit, upgrade or repair activity. The sample results must be labeled with the full site name, address, and date of the retrofit, upgrade or repair activity. It is the responsibility of the owner and operator or designated representative to provide all necessary information to the DNREC-TMS.

ANALYTICAL PARAMETERS

All soil samples from petroleum tanks must be analyzed according to the following **DERBCAP Tier 0** table below:

Analyte	Tier 0 Action Level	Gasoline	Kerosene/ Jet Fuels	Diesel/ Heating Fuels	Used Oil ^{1,2}	Aviation Gas	New Oil	Heavy Oils	Other
BTEX ^{5,7}	Benzene 230 ppb, Total BTEX 10 ppm	X	X		X	X			
GRO ⁷	100 ppm	X	X		X	X			
DRO	1000 ppm		X	X	X		X		
HRO	Site by Site				X		X	X	
Lead, EDB ⁷ , EDC ⁷	400 ppm, 10 ppb, 400 ppb	X ⁴			X	X			
MTBE ^{3,7}	130 ppb	X	X		X	X			
Ethanol ^{7,8}	None	X							
Other ⁶	Site by Site								X ⁶

Footnotes:

- Used oil as defined in the Delaware *Regulations Governing Underground Storage Tank Systems*, Part A, Section 2. and the Delaware *Regulations Governing Hazardous Waste*.
- Used oil USTs may also be required to analyze for metals, volatiles, semi-volatiles or any other analyte as required on a site specific basis depending on the tank contents. Contact the DNREC-TMS for determination.
- MTBE analysis is required, unless conclusive documentation is submitted and pre-approved by the DNREC-TMS that no portion of the tank system was in service after January 1, 1978.
- For gasoline USTs only, Lead, EDB and EDC analysis is required, unless conclusive documentation is submitted and pre-approved by the DNREC-TMS documenting that all portions of the tank system were installed after January 1, 1996.
- In addition to total BTEX, benzene must be reported separately.
- If the tank system contained anything other than petroleum products or if the tank system contained Racing Fuel, contact the DNREC-TMS for information on sampling procedures and analytical requirements prior to any on site activities.
- Samples collected for the analysis of volatile organic compounds must be preserved with methanol. Encore™ samplers are acceptable provided the preservative is methanol. . Note: Encore™ Samplers should not be used when sampling pea gravel. When sampling pea gravel, methanol preservation of the sample in the field is required.
- Ethanol analysis is required, unless conclusive documentation is submitted and pre-approved by the DNREC-TMS that no portion of the tank system was in service after April 1, 2006.